as one network with common marketing and pricing policies and equipment offerings.[973]

AirTouch also has a 4.5 percent interest in each of two other cellular operators, one serving the Kyushu/Okinawa region, the other serving the Chugoku region.[974] Both operators are expected to begin service in 1996.[975] All five of the cellular operators in which AirTouch has an equity interest, in total, will serve regions with about ninety-five million people, or 75 percent of the Japanese population.[976]

The IDO Corp. operates both an analog and a digital cellular network in the Tokyo-Nagoya corridor.[977] NTT is both a competitor and a partner of IDO.[978]

DDI Corp. has eight cellular subsidiaries throughout Japan. As of July 1994, DDI had 561,900 cellular subscribers and a subscribership growth rate of 5 percent per month.[979]

Additional competition will emerge in Japan's wireless markets with the development of the Personal Handy Phone System (PHS). PHS is similar but not identical to the American personal communications services (PCS) technology. PHS is a Japanese standard for portable telephones that uses very low-power transmitters operating within a small radius. PHS is cheaper to install and operate than a cellular network. Handsets are smaller and lighter than conventional cellular telephones because of the reduced battery power required.[980]

973. AIRTOUCH COMMUNICATIONS, INC., 1993 SEC FORM 10-K, at 14 (1994).

974. AIRTOUCH COMMUNICATIONS, INC., 1994 ANNUAL REPORT 64 (1995).

975. *Id.*

976. *Id.*

977. David P. Hamilton, *Motorola Settles Cellular Dispute With Japanese*, WALL ST. J., Mar. 11, 1995, at A8.

978. *Id.*

979. Robert Steiner, *Japan's Information Highway is Pricey*, WALL ST. J., Aug. 17, 1994, at C1.

980. Michiyo Nakamoto, *C&W invests £10m in new Japanese telecoms format*, FIN. TIMES, Feb. 24, 1995, at 5.

Three consortia hold licenses to provide PHS services in Japan: a group led by DDI; a group of nine companies affiliated with NTT; and Astel, a consortium of ten companies, including Mitsubishi Power.[981] Each group hopes to carve for itself a large portion of what is predicted to become by 2005 a market of 10 million subscribers generating annual sales of $14 billion.[982] Demand is also projected to quadruple in the five years thereafter.[983]

The vast growth potential believed to exist for the PHS market has attracted significant interest from foreign companies. Cable & Wireless has made the most significant investment thus far. In February 1995, Cable & Wireless acquired 5 percent of NTT Central Personal Communications Network (CPCN)—the group of nine companies affiliated with NTT—for $15.5 million, making Cable & Wireless the third largest shareholder in the PHS venture.[984] CPCN will begin providing PHS service in July 1995. Many other large foreign telecommunications firms, including BT, France Telecom, U S West, and NYNEX are believed to be exploring investment opportunities in the other PHS operators.[985]

SOUTH AMERICA

Chile

Chile, the first Latin American country to privatize its telecommunications industry, has cultivated one of the world's most competitive and open telecommunications environments. Chile is the only country in Latin America with a completely

981. *Id.*
982. *Japan Calls It PHS and Competitors Listen, supra* note 957.
983. Nakamoto, *C&W invests £10m, supra* note 980.
984. *Id.*
985. *Japan Calls It PHS and Competitors Listen, supra* note 957

liberalized telecommunications market.[986] For most of Chile's history, telecommunications operators were privately held and open to foreign direct investment. In the early 1970s, however, the state nationalized the country's telecommunications operators. Then in the late 1970s, the Chilean government began steps toward privatization and liberalization, which were completed in the late 1980s.

With a population of just under fourteen million people, Chile is a telecommunications market of modest size.[987] Nonetheless, since privatization and liberalization, the country's telecommunications industry has experienced significant growth, and investment in the country's telecommunications infrastructure, from both domestic and international sources, remains high.

Telephony. Telecommunications services in Chile have traditionally been shared by two companies, one controlling the local exchanges, the other providing long-distance services. Compañia de Teléfonica de Chile (CTC) provided, on a nearly exclusive basis, the country's local telephone services. Empresa Nacional de Telecomunicaciones (ENTEL) provided, on an exclusive basis, the country's domestic and international long-distance services.

Beginning in 1930, International Telephone & Telegraph (ITT) owned 80 percent of CTC.[988] In 1971, Salvador Allende, Chile's recently elected Marxist president, decreed that the government assume control of CTC. To postpone having to compensate ITT for CTC, the Allende government

986. TPG RESEARCH & REPORTS, LATIN AMERICAN TELECOMMUNICATIONS: EXECUTIVE SUMMARY 3 (1995); Nomura Equity Research, Latin America Telecommunications Regulatory Symposium Transcript 10 (Apr. 25, 2995) (remarks of Jorge Rosenblut, Undersecretary of Telecommunications, Chile) [hereinafter *Rosenblut Remarks*].

987. ITU WORLD DEVELOPMENT REPORT, *supra* note 6, at A–1.

988. *See* ANTHONY SAMPSON, THE SOVEREIGN STATE OF ITT (Stein & Day 1973).

did not formally expropriate CTC. Two years later, Allende died in the military coup that brought Augusto Pinochet to power. Pinochet agreed to pay ITT the full amount that it requested for CTC. In 1974, the Corporacion de Fomento de la Produccion (CORFO) bought ITT's entire 80 percent interest in CTC.

Shortly after the purchase from ITT, the Pinochet government commenced privatization and liberalization of the state-owned telecommunications operators. Two legislative initiatives in the late 1970s and early 1980s structured this government undertaking. In 1978, the government enacted the National Telecommunications Policies Act, which authorized the government to grant licenses for the provision of telecommunications services.[989] In 1982, the Chilean government passed the General Law of Telecommunications, which regulates competition in the country's telecommunications markets.[990] Today, all of Chile's telecommunications markets are open to competition. The Ministry of Transportation and Telecommunications, the government agency responsible for regulating the telecommunications sector, allows any firm, domestic or foreign, to enter any particular telecommunications market, subject only to the Ministry's approval and grant of a franchise license.[991]

In 1988, after conducting an open international bid, CORFO sold 30 percent of its CTC shares to the Bond Corporation Chile, a subsidiary of Bond Corporation International, Ltd. of Australia (Bond).[992] Bond subsequently increased its stake in CTC to 50 percent and embarked on a plan to double the size of CTC's network by 1992.

In 1990, Telefónica Internacional, Telefónica de España's international holdings subsidiary, purchased most of

989. ITU WORLD DEVELOPMENT REPORT, *supra* note 6, at 63.

990. *Id.*

991. TPG RESEARCH & REPORTS, *supra* note 986, at 4.

992. *Compania de Telefonos de Chile S.A.*, *in* HOOVER'S HANDBOOK OF AMERICAN BUSINESS (1995).

Bond's interest in CTC and issued shares on the New York Stock Exchange in the form of American depositary receipts (ADRs).[993] Telefónica Internacional owns 43.63 percent of CTC.[994] The public holds the remaining interest. Chilean statute and CTC's bylaws prohibit any shareholder from owning more than 45 percent of CTC.[995]

When it sold the share of CTC to Bond, the Chilean government also privatized ENTEL. Telefónica Internacional purchased 20 percent.[996] Chase Manhattan Bank owns 10 percent.[997] Employees, the Chilean army, pension funds, and private investors own the remaining 70 percent.[998] In April 1992, the Fiscalía Nacional Económica ruled that Telefónica Internacional's ownership of both CTC and ENTEL violated antimonopoly rules; Chile's Supreme Court affirmed the decision.[999] Though apparently compelled to divest one of the holdings, Telefónica Internacional still retained its interest in both companies as of July 1994.[1000]

Five other companies compete against CTC in providing local telephony service. All six of these local operators are permitted to provide long-distance services through independent subsidiaries.[1001] In additional to these six local operators, other companies hold long-distance licenses. In total, eleven

993. Garibaldi & Torres, *supra* note 9, at 264.

994. TELEFÓNICA DE ESPAÑA, S.A. 1993 SEC FORM 20-F, at f-11 (1994).

995. *Compania de Telefonos de Chile S.A., in* HOOVER'S HANDBOOK OF AMERICAN BUSINESS (1995).

996. TELEFÓNICA DE ESPAÑA, S.A. 1993 SEC FORM 20-F, at f-12 (1994).

997. INTERNATIONAL TELECOMMUNICATIONS UNION, CROSS OWNERSHIP IN THE TELECOMMUNICATION SERVICE SECTOR 3 (unpublished report Mar. 23, 1995) [hereinafter ITU CROSS OWNERSHIP REPORT].

998. Garibaldi & Torres, *supra* note 9, at 264.

999. *Id.* at 264.

1000. TELEFÓNICA DE ESPAÑA, S.A.1993 SEC FORM 20-F, at f-11 (1994).

1001. TPG RESEARCH & REPORTS, *supra* note 986, at 5; *Rosenblut Remarks, supra* note 986, at 12.

companies are licensed to provide long-distance service.[1002] BellSouth is one of these companies; it holds a license to operate a competing domestic and international long-distance concession in Chile, and it began service in late 1994.[1003]

Although CTC and ENTEL remain the dominant carriers, the privatization of the two companies and the liberalization of the telecommunications markets increased competition throughout Chile's telecommunications industry, which in turn has improved services and accelerated infrastructure development.[1004] In 1989, Chile had only 4.5 telephone lines per 100 inhabitants; by 1995, it had thirteen lines per 100 inhabitants.[1005]

Cable Television. In 1994, CTC acquired 80 percent of Intercom, Chile's largest cable television company. CTC plans to offer interactive video services over the broadband network.[1006]

Wireless. Cellular services were first introduced to Chile in 1988. Although subscribership has grown rapidly, cellular service still has not established significant penetration. In 1990, 13,9000 people subscribed to cellular service; by 1992, subscribership had grown at a compounded annual growth rate of 115.1 percent but still amounting to only 64,400 people.[1007]

There are four licensed providers of cellular service in Chile. Carriers have also requested authorization to provide personal communications (PCS), which Undersecretary Jorge Rosenblut expects to be available by the end of 1995.[1008] CTC

1002. TPG RESEARCH & REPORTS, *supra* note 986, at 5.

1003. BELLSOUTH CORP., 1994 SEC FORM 10-K, at 12 (1995).

1004. Garibaldi & Torres, *supra* note 9, at 253.

1005. *Rosenblut Remarks, supra* note 986, at 11; TPG RESEARCH & REPORTS, *supra* note 986, at 5.

1006. *Compania de Telefonos de Chile S.A., in* HOOVER'S HANDBOOK OF AMERICAN BUSINESS (1995).

1007. ITU WORLD DEVELOPMENT REPORT, *supra* note 6, at A-28.

1008. *Rosenblut Remarks, supra* note 986, at 11.

Celular, a subsidiary of CTC, and Cidcom Celular compete in Santiago and Valparaiso. BellSouth owns 100 percent of Cidcom.[1009] Telecom Celular of Chile and VTR Celular compete in the rest of the country.

Between 1995 and 1999, the Chilean government plans to spend $40 million to establish "Calling Centers" in rural and poor areas where public pay telephones and fax machines will be available from private operators.[1010] Chile's Undersecretary of Telecommunications, Jorge Rosenblut, expects 70 to 80 percent of these access lines to be wireless.[1011]

Argentina

Until 1990, the Argentine government maintained the state-owned public telecommunications operator Entel as the sole provider of most telecommunications services in Argentina. In 1990, the government privatized Entel, splitting the operator into two companies, one to serve the northern half of the country and the other to serve the southern half. Each operator received a seven-year statutory monopoly (with the possibility for a three-year extension) to provide local, domestic long-distance and international telephone voice services, and to own and operate the nation's fixed-link telecommunications infrastructure. The government allows for competition in markets for terminal equipment, domestic data services, value-added services, and mobile communications. Large shares of the two privatized telecommunications operators were sold to consortia consisting mostly of foreign investors, including at least one foreign telecommunications operator with the marketing experience and technical expertise to manage the future development and operation of the country's telecommunications network.

1009. BELLSOUTH, 1994 SEC FORM 10-K, at 10 (1995).
1010. *Rosenblut Remarks, supra* note 986, at 12.
1011. *Id.* at 16.

Argentine telecommunications infrastructure and services are undeveloped and unsophisticated relative to more industrialized nations. Argentina has a population of approximately thirty-four million people and 11.78 telephone lines per 100 inhabitants, a penetration rate that is low compared to the U.S. (56.12 lines per 100 inhabitants) or France (51.52 lines per 100 inhabitants) but high compared to South American neighbors like Brazil (6.97 lines per 100 inhabitants) or Peru (2.73 lines per 100 inhabitants).[1012]

Telephony. Before 1990, Empressa Nacional de Telecomunicaciones (Entel) owned and provided, on an exclusive basis, nearly all of Argentina's telecommunications infrastructure and services. The Republic of Argentina owned 100 percent of Entel, but in 1989, the government passed State Reform Law No. 23,696, pursuant to which Entel's telecommunications network was split in two, forming one basic telephony network for the north of Argentina and one for the south. The government granted licenses to own and operate the network to Telecom Argentina in the north and Sociedad Licenciataria Sur S.A. (SLS) in the south.[1013]

The Comision Nacional de Telecomunicaciones (CNT) and the Secretaria de Obras Publicas y Comunicaciones (SOPYC), the two government agencies responsible for regulating Argentina's telecommunications industry, impose no restriction on foreign direct investment in an Argentine telecommunications licensee.[1014] To the contrary, the Argentine government recognized that foreign capital, as well as the marketing and technical expertise of a foreign telecommunications operator, were necessary to develop Argentina's telecommunications infrastructure. As part of the privatization process, the government therefore sold majority interests in

1012. TELEFÓNICA DE ARGENTINA, 1994 SEC FORM 20-F, at 8 (1995).
1013. *Id.* at 3.
1014. *Id.*

the bifurcated state-owned telecommunications operator to foreign consortia.

On November 8, 1990, Compania de Inversiones en Telecomunicaciones S.A. (COINTEL) purchased 60 percent of SLS from the Argentine government and changed the company's name to Telefónica de Argentina.[1015] Telefónica Internacional (Telefónica de España's 76.22 percent-owned international operations subsidiary, in which the Spanish government owns the remainder)[1016] owns 28.8 percent of COINTEL and has a total equity stake in Telefónica de Argentina of 19.4 percent.[1017] Citicorp Venture Capital S.A. (a wholly owned subsidiary of Citicorp) and Inversora Catalinas S.A. (a wholly owned subsidiary of Techint Compania Tecnica Internacional S.A.) also own a share of COINTEL.

As part of the sale, Telefónica de España entered into a management contract with Telefónica de Argentina. The duration of the contract coincides with that of Telefónica de Argentina's monopoly license. Under the terms of the contract, Telefónica de España has nearly complete control of Telefónica de Argentina, subject only to certain buildout and quality of service requirements upon which the operating license is conditioned.[1018]

Also in November 1990, the Argentine government sold 60 percent of Telecom Argentina to Nortel Inversora, a consortium comprised of STET, France Telecom, J.P. Morgan, and a group of Argentine investors. STET holds 32.5 percent of the ordinary shares of Nortel Inversora.[1019] France Telecom also owns 32.5 percent of Nortel Inversora.[1020] To-

1015. *Id.* at f-9.

1016. CRANSTON, *supra* note 303, at 143.

1017. TELEFÓNICA DE ESPAÑA, S.A., 1993 SEC FORM 20-F, at 13 (1994).

1018. TELEFONICA DE ARGENTINA, 1994 SEC FORM 20-F, at 13 (1995).

1019. STET, SOCIETA FINANZIARIA TELEFONICA P.A., REPORT ON OPERATIONS: FIRST HALF OF 1994, AT 12 (1994).

1020. ITU CROSS OWNERSHIP REPORT, *supra* note 6, at 2.

gether, STET and France Telecom have operating control of Telecom Argentina.

In the two years following the sale of controlling interests to the consortia, the Argentine government sold or transferred the remaining 40 percent of the shares that it still held in each company. In December 1991, the government sold 30 percent of both Telecom Argentina and Telefónica de Argentina through an initial public offering on the Buenos Aires Stock Exchange and the New York Stock Exchange.[1021] In December 1992, the government transferred the final 10 percent of the capital stock of the two companies to people who were Entel employees as of November 1990.[1022]

To help attract significant foreign investment in the two telecommunications operating companies, the Argentine government granted both Telefónica de Argentina and Telecom Argentina perpetual licenses to provide "basic telephone services" within their respective regions. Basic telephone services are defined as: (1) the supply of fixed telecommunications connections that form part of the public telephone network or are connected to such network and (2) the provision through these links of local, domestic long-distance and international voice telephony services.[1023] The licenses have been granted on an exclusive basis for seven years, beginning in November 1990. Upon the expiration of the seven-year monopoly in late 1997, both operators will have the option to extend the exclusivity period for three years, provided that certain performance standards have been met during the seven-year period.[1024]

Telecom Argentina and Telefónica de Argentina jointly provide all international services as well as domestic data and telex services through two commonly owned subsidiaries. Pursuant to the State Reform Law, the Argentine government

1021. TELEFÓNICA DE ARGENTINA, 1994 SEC FORM 20-F, at 3 (1995).
1022. *Id.* at f-9.
1023. *Id.* at 18.
1024. *Id.* at 3.

formed Telecomunicaciones Internacionales de Argentina S.A. (Telintar) and Startel S.A. (Startel).[1025] Telintar received from the government an unlimited license on an exclusive basis for seven years (with a possible three-year extension) to provide international telecommunications services, including telephone, international data transmission, international telex, and international direct connections.[1026] Startel received an unlimited license on a non-exclusive basis to provide domestic telex and data transmission services.[1027] Telecom Argentina and Telefónica de Argentina both own 50 percent of Telintar and Startel.

Wireless. Three companies hold licenses to provide cellular service in Argentina: Movicom, Movistar, and CTI. The Argentine government has divided the cellular market into the Buenos Aires region and the remainder of the country. Within the near future, two companies will compete in each area.

Movicom S.A., an independent cellular operator introduced cellular service to the Buenos Aires area in 1989. BellSouth owns 42.5 percent of Movicom.[1028] Motorola, CitiCorp, and the Macri Group (a group of Argentine investors) own the rest.

In 1992, the Argentine government licensed Movistar to compete against Movicom in providing cellular service to Buenos Aires and the surrounding areas.[1029] Telefónica de Argentina and Telecom Argentina both own 50 percent of Movistar.[1030]

In 1994, the Argentine government awarded a license to the CTI Consortium (CTI) to provide cellular service in all regions of Argentina other than the Buenos Aires area in

1025. *Id.*
1026. *Id.* at 20.
1027. *Id.*
1028. ITU CROSS OWNERSHIP REPORT, *supra* note 6, at 2.
1029. TELEFÓNICA DE ARGENTINA, 1994 SEC FORM 20-F, at 13 (1995).
1030. *Id.* at 4.

which Movicom and Movistar compete. GTE, AT&T, and two Argentine companies—Clarin and Benito Roggio—own CTI.[1031] The independent provider of mobile telephone service has already entered into an interconnection agreement with both Telefónica de Argentina and Telecom Argentina. After a two-year period during which CTI will be able to build a network and establish a customer base, the existing fixed-link companies—Telecom and Telefónica—will be licensed to provide a competing cellular service within their respective regions.[1032]

CONCLUSION

Although telecommunications markets around the world are opening to greater competition and foreign investment, most governments are proceeding cautiously. Competition and an openness toward foreign investment enhance consumer welfare, access to technical and managerial expertise, and a sharing of the high financial burdens involved in modern network development. Nonetheless, many governments view foreign direct investment as the ultimate threat to control.

The preceding country analyses demonstrate the gains in consumer welfare that flow from competition. Most governments, if they have not already fully liberalized their markets, have at least acknowledged the importance of competition in telecommunications and initiated plans to liberalize. Countries like the U.K. and New Zealand, which tore down barriers to competition and foreign investment, have enjoyed substantial capital investment and marked infrastructure development. In the U.K., competing local exchange networks are a reality, eliminating the bottleneck once considered a natural monopoly. Even countries that have allowed competition only in a given service, such as cellular telephony, evidence the

1031. ITU WORLD DEVELOPMENT REPORT, *supra* note 6, at 64.
1032. *Id.*

fruits of competition. France, Germany, and Japan are examples of markets where the absence of competition had produced high prices and stagnant subscribership for cellular telephony, and the introduction of competition through foreign direct investment has subsequently caused prices to fall and subscribership to rise.

Foreign investment yields access to technical and managerial expertise and assistance to domestic telecommunications service providers in bearing the high financial risk in modern network buildout. This factor has contributed to the levels and the extent of foreign direct investment that exist in the telecommunications services industry throughout the world today. Governments have often allowed foreign direct investment in their respective telecommunications markets only to the extent they deemed necessary. Thus, foreign (particularly American) equity participation in many European and some Asian markets has been confined to the wireless sector, where the foreign carriers had a comparative advantage over the domestic carrier. In lesser developed countries, such as those in South America, there has been greater receptivity toward foreign investment in *all* sectors, including traditional wireline telephony.

The greatest inhibitor of foreign direct investment in telecommunications services has been the perception by governments that foreign direct investment means a loss of control. Consequently, where foreign direct investment exists, it is structured to ensure domestic control. In the overwhelming majority of countries examined above, foreign direct investment combines minority investment by a foreign telecommunications firm possessing technical and managerial expertise with the political and financial might of a large domestic company not currently operating in the non-telecommunications industry. The foreign carriers take these minority positions with the hope of establishing a foothold in the given country and the desire to increase their global presence.

Finally, privatization and liberalization initiatives are expected to culminate around 1998 with the sale of large

stakes in three major European telecommunications operators—Deutsche Telekom, Stet, and Telefónica de España. Despite grand designs for full liberalization, the proponents of telecommunications market reform will be forced to overcome the opposition of interest groups with a stake in the status quo. Although the EC has directed that all telecommunications services markets and infrastructure shall be fully liberalized by January 1, 1998, it is unclear how successful these plans for liberalization will be in France or Germany where large unions prefer protected markets.

7

Trade Policy

NO EVIDENCE EXISTS in the text of section 310(b) or in the legislative history of the Communications Act of 1934 that Congress intended this statute to be a tool of international trade policy. Nonetheless, the FCC has increasingly used the foreign ownership restrictions for that purpose. By the summer of 1995, moreover, it became clear that either Congress would amend or the FCC would interpret section 310(b) to create a bilateral test by which a foreigner's ability to invest in a U.S. radio licensee would be made conditional on the treatment given U.S. investors by the foreigner's government.

Neither classical trade theory nor strategic trade theory suggests that this reciprocity model would benefit the U.S. It would be better for Congress simply to repeal section 310(b). If repeal is politically infeasible, however, Congress would best advance the public interest by amending section 310(b) in a manner that neither denies American consumers the benefits of competitive entry into the U.S. by foreign telecommunications carriers nor provokes other nations to retaliate against the U.S. by closing their markets to direct investment by U.S.

telecommunications firms. An amendment to section 310(b) that passed the House of Representatives in August 1995 would, if modified in conference, provide the means to accomplish those twin objectives.

TRADE IN CAPITAL VERSUS TRADE IN GOODS

Most of the theory of trade addresses the movement of goods and services across international boundaries. Trade theory has far less to say about international flows of factors of production—that is, labor, capital, managerial expertise, and technological know how. Some caution is therefore necessary before imputing to trade in factor inputs the same analytical conclusions that emerge from the theory of trade in goods and services.

The foreign investment restrictions in section 310(b) of the Communications Act limit the free flow across national boundaries of factors of production, not final products. Foreign direct investment in telecommunications involves the international movement of financial capital, technology know how, and human capital in the form of managerial expertise.[1] The outward flow of managerial expertise from the American telecommunications firms to foreign markets is likely to be especially valuable, because the domestic managers of formerly state-owned PTTs may lack the experience of American managers in running a firm in a competitive market or in dealing with an independent regulatory body.

Despite this important distinction between goods and factors of production, the policy debate concerning section 310(b) has proceeded without any recognition of the possibly

1. *See* EDWARD M. GRAHAM & PAUL R. KRUGMAN, FOREIGN DIRECT INVESTMENT IN THE UNTIED STATES 36–37 (Institute for International Economics 3d ed. 1995); PAUL R. KRUGMAN & MAURICE OBSTFELD, INTERNATIONAL ECONOMICS: THEORY AND PRACTICE 149, 160–61 (Harper Collins 3d ed. 1994).

limited relevance of analogies to classical trade theory or strategic trade theory. "Beyond the simple issue of fairness," observes economist Steven Globerman in a rare and incisive article on foreign ownership restrictions in telecommunications, "there has been little critical analysis of the merits of a policy of reciprocity in the area of foreign ownership restrictions."[2] Of course, it may be unduly naïve to assume that *any* economic theory truly influences Congress or the FCC in its interpretation or amendment of section 310(b). For example, the FCC's 1995 notice of proposed rulemaking concerning international competition and foreign investment is conspicuously devoid of any discussion of international trade theory.[3] Nonetheless, because at least some arguments offered in support of amending section 310(b) allude to strategic policies toward trade in goods, it is necessary to start our analysis by examining classical trade theory and strategic trade theory.

CLASSICAL TRADE THEORY

The classical theory of free trade, articulated by Adam Smith and David Ricardo and subsequently refined in the twentieth century by Gottfried Haberler, argues that the unrestricted movement of goods and services across international boundaries leads to specialization and the exploitation of comparative advantage and thus increases the wealth of both the exporting and importing countries.[4] Trade enables countries to

2. Steven Globerman, *Foreign Ownership in Telecommunications: A Policy Perspective*, 19 TELECOM. POL'Y 21, 25 (1995) [hereinafter *Foreign Ownership*].

3. Market Entry and Regulation of Foreign-affiliated Entities, Notice of Proposed Rulemaking, IB Dkt. No. 95-22, 10 F.C.C. Rcd. 5256 (1995) [hereinafter *Market Entry and Regulation*].

4. *See* GOTTFRIED HABERLER, THEORY OF INTERNATIONAL TRADE 121-98 (William Hodge & Co. 1965) (German ed. 1933); ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 447-96 (University of Chicago Press 1976) (1776); DAVID RICARDO, ON THE PRINCIPLES OF POLITICAL ECONOMY

benefit from their different endowments of climate, skills, and natural resources. A nation produces and exports what it can produce most efficiently relative to other nations, even if another nation is a more efficient producer of those goods in an absolute sense. Implicitly, the classical view is a static theory of trade. It assumes, moreover, perfect competition—that is, that many small firms produce a homogeneous product and act as price takers.[5]

The classical theory of trade provided reasonably good predictions of trade flows before World War II: Skill-intensive, advanced economies exported manufactured goods, and land-abundant economies exported raw materials and agricultural products. Since the war, however, a large share of trade cannot be attributed to the differences in endowments between countries. Among developed countries, trade in manufactured goods has increased between countries with similar endowments. Economists believe that, in many technology-intensive industries, competitive advantage today arises from a firm's research and development and its accumulated learning or experience.[6] By 1986, these trends had prompted the noted trade economist Paul Krugman to observe that "trade seems to reflect arbitrary or temporary advantages resulting from economies of scale or shifting leads in close technological races."[7] By 1995, one could be even more confident of that assessment.[8]

AND TAXATION 77-93 (Guernsey Press Co. 1992) (1817).

5. For a more detailed exposition of classical trade theory, see KRUGMAN & OBSTFELD, *supra* note 1, at 11-37.

6. *See* MICHAEL PORTER, THE COMPETITIVE ADVANTAGE OF NATIONS 33-68 (Free Press 1990); SHARON M. OSTER, MODERN COMPETITIVE ANALYSIS 289-308 (Oxford University Press 2d ed. 1994).

7. Paul R. Krugman, *Introduction: New Thinking about Trade Policy, in* STRATEGIC TRADE POLICY AND THE NEW INTERNATIONAL ECONOMICS 9 (Paul R. Krugman ed., MIT Press 1986).

8. *See* PAUL R. KRUGMAN, PEDDLING PROSPERITY (MIT Press 1994); PORTER, *supra* note 6, at 12.

STRATEGIC TRADE THEORY AND ITS CRITICS

Strategic trade theory presents an alternative to classical trade theory and its prescription for free trade. Employing tools from industrial organization and game theory, strategic trade theorists emphasize the effect on domestic economic welfare of oligopolistic markets earning supracompetitive profits; increasing return to scale in production; and positive spillover effects in high technology industries. Strategic trade theory is relevant to section 310(b) because it is likely to appeal to, and thus be cited as intellectual support by, those who argue that foreign direct investment in U.S. telecommunications firms should be made conditional on the openness of the foreigner's telecommunications market to direct investment by U.S. firms.

Oligopoly Rents

Strategic trade theorists assert that many markets are not perfectly competitive. Oligopolistic firms can earn supracompetitive returns for an extended period of time, and nations compete to capture a larger share of those economic rents. This line of analysis builds on the work of James Brander and Barbara Spencer, who developed a game theoretic model in which a government's strategic management of trade can benefit domestic firms.[9]

Brander and Spencer consider an industry having two firms, each in one country, that export their output to a third country. To simplify, they assume no domestic demand for this good in any country. The choice variable is the quantity produced by each firm; the firms determine prices once the

9. James A. Brander & Barbara J. Spencer, *Export Subsidies and International Market Share Rivalry*, 16 J. INT'L ECON. 83 (1985).

total quantity produced in the industry has been determined. In other words, each firm takes the quantity produced by the other firm as given and then determines its own profit-maximizing output level. Such behavior is called a Cournot oligopoly.[10] In equilibrium (called a Nash equilibrium), each firm maximizes its profits given the quantity that the other firm produces.[11] If, in the first round, the domestic firm were to increase its output from the Nash equilibrium, then the foreign firm would decrease its output to prevent the price of its good from falling. Given the Cournot assumption, the domestic firm would decrease output in the second round to maximize its profit, given the reduced output of the foreign firm in the first round. This process would lead the foreign firm to change its output, and successive rounds of output adjustments would occur until the firms returned to a Nash equilibrium.

If, after increasing its output in the first round, the domestic firm did *not* change its output in the second round, then neither would the foreign firm; there would result, relative to the Nash equilibrium, higher output and profits for the domestic firm at the expense of the foreign firm. If the government gave its domestic firm a subsidy to increase its output in the first round, the domestic firm would have the incentive not to change its output in the second round. The government's strategic trade policy would thereby make the domestic firm better off than it would be under free trade.

In the Brander-Spencer model it is therefore possible, at least under one set of assumptions regarding noncooperative oligopolistic behavior, for a government to alter the rules of

10. For a discussion of Cournot and other oligopoly models, see DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 229–80 (Harper Collins 2d ed. 1994); HAL R. VARIAN, MICROECONOMIC ANALYSIS 285–88 (W.W. Norton & Co. 3d ed. 1992); JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 209–44 (MIT Press 1988).

11. *See, e.g.* DAVID R. KREPS, A COURSE IN MICROECONOMIC THEORY 427–43 (Princeton University Press 1990).

the game and shift excess returns in an oligopolistic industry from foreign to domestic firms. This intervention would increase the national income of the country imposing the subsidy and decrease the national income of the foreign firm's country.

Although the Brander-Spencer model may be cited in support of strategic intervention by the government, slight variations on the model eliminate or even reverse its salutary conclusions. The predictions of strategic trade theory depend critically on the assumption of Cournot competition. If one instead assumes Bertrand competition to exist—that is, firms choose price instead of quantity as the choice variable[12]—then, it can be shown analytically that the government's optimal strategy is to impose an export *tax*, not an export subsidy.[13] Of course, that analysis is not an argument in favor of export taxes. Rather, it is analytical support for the conclusion that free trade is the best policy because strategic trade policy can be shown to improve economic welfare only under very rigid conditions that are not normally observed in real markets.

Furthermore, the Brander-Spencer model ignores the effect of a subsidy to the exporting firm on other domestic firms.[14] A subsidy will lead the targeted firm to increase its output, thereby shifting resources away from other firms in the economy. Domestic firms will experience an increase in their marginal costs and will become less competitive. To determine whether the subsidy would increase domestic economic welfare, one must have detailed knowledge about the targeted firm, its foreign competitor, and the other domestic firms that compete with the targeted firm for resources. Timely information of this sort is unlikely to be available to any

12. On Bertrand competition, see VARIAN, *supra* note 10, at 291–94.

13. Jonathan Eaton & Gene M. Grossman, *Optimal Trade and Industrial Policy Under Oligopoly*, 101 Q.J. ECON. 383 (1986).

14. Avinash K. Dixit & Gene M. Grossman, *Targeted Export Promotion with Several Oligopolistic Industries*, 21 J. INT'L ECON. 233 (1986).

government.

Finally, the entry of new firms into the subsidized industry might dissipate the benefits of strategic trade policy by creating excess capacity.[15] Inefficient entry causes the average costs of production to rise, thereby leading to a welfare loss. This effect works in exactly the opposite direction of the no-entry case, which can hardly be guaranteed.[16]

The empirical studies that test strategic trade theory have mixed results. A survey of the empirical research in strategic trade theory as of 1992 found that the available evidence does not undermine the case for free trade; the benefits of regulating trade are uncertain or even negative.[17] Ordinarily, one would use econometric models to test the various claims that rely on imperfect competition. In practice, however, it is nearly impossible to identify (and quantify) the relevant firm behavior, and often the crucial data are unreliable, unavailable, or unobservable. Consequently, some studies have used a "calibration process" to test the predictions of strategic trade theory.[18] In this technique, one specifies a theoretical model with a reasonable number of parameters. Estimates of some of the parameters may be available from previous econometric estimates (if they exist) or engineering studies. By altering the parameter values, one can test whether the results (and hence the policy recommendations) of the strategic trade model are sensitive to any particular assumption made in the model. Richard Baldwin and Paul Krugman have used the calibration

15. Ignatius J. Horstmann & James Markusen, *Up Your Average Cost Curves: Inefficient Entry and New Protectionism,* 20 J. INT'L ECON. 225 (1986).

16. *Id.* at 226.

17. Anette Gehrig & Klaus F. Zimmermann, *Recent Developments in Strategic Trade Policy and Empirical Evidence, in* EXPORT ACTIVITY AND STRATEGIC TRADE POLICY 9 (Horst Kräger & Klaus Zimmermann eds., Springer-Verlag-Heidelberg 1992).

18. *See* Avinash K. Dixit, *Optimal Trade and Industrial Policies for the U.S. Automobile Industry, in* EMPIRICAL METHODS FOR INTERNATIONAL TRADE 141, 144–48 (Robert C. Feenstra ed., MIT Press 1987).

technique to investigate whether strategic trade theory can explain international competition for jet aircraft. They conclude that models like Brander-Spencer "neglect consumer effects of strategic trade policy," and that "while useful for expositional purposes," those models "are likely to be misleading when applied to real situations in which a sizeable fraction of production goes to satisfy domestic demand."[19]

In another study, Robert Baldwin and Richard Green have found in five U.S. industries that strategic trade protection did not promote domestic demand.[20] Finally, Robert Baldwin and Paul Krugman studied competition between the U.S. and Japan in random access memories and concluded that privileged access to a domestic market gave Japanese firms an advantage, although other parts of Japan's economy incurred losses.[21]

Increasing Returns to Scale

Perfect competition assumes constant average cost, which does not change with the scale of output. Increasing returns to scale are said to exist when average cost decreases with the quantity produced.[22] In the presence of increasing returns, a country in principle can help its domestic firms achieve a cost advantage by protecting the domestic market from foreign competition.

19. Richard Baldwin & Paul R. Krugman, *Industrial Policy and International Competitive in Wide-Bodied Jet Aircraft*, *in* TRADE POLICY ISSUES AND EMPIRICAL ANALYSIS 45, 71 (Robert E. Baldwin ed., University of Chicago Press 1988).

20. Robert E. Baldwin & Richard K. Green, *The Effects of Protection on Domestic Output*, *in* TRADE POLICY ISSUES AND EMPIRICAL ANALYSIS, *supra* note 19, at 205, 223–24.

21. Robert E. Baldwin & Paul R. Krugman, *Market Access and International Competition: A Simulation Study of 16K Random Access Memories*, *in* EMPIRICAL METHODS FOR INTERNATIONAL TRADE 171, 194–95 (Robert C. Feenstra ed., MIT Press 1987).

22. *See, e.g.*, CARLTON & PERLOFF, *supra* note 10, at 58.

This policy enables the domestic firm to attain a higher level of output and thus produce at a lower average cost, which benefits the firm when it competes with foreign firms in international markets.

As in the case of the use of strategic trade policy to capture oligopoly rents for a domestic firm, the use of government intervention to enable the domestic firm to achieve economies of scale is fraught with difficulties. Again, one would expect the domestic welfare effects to depend critically on whether the oligopoly conforms to Bertrand or Cournot behavior. And, again, the use of a subsidy for the exporting industry is likely to divert resources from other domestic industries for the reasons discussed earlier.

Positive Externalities in High Technology Industries

Beneficial spillover effects in high technology industries are another justification given for departing from free trade. A positive externality is a benefit arising from the production of a good that its producer cannot capture for himself.[23] When positive externalities are present, the social benefits of production exceed the private benefits. Producers maximize their returns by expanding output until the marginal cost of production equals the private benefit. The presence of positive externalities leads to market failure in the sense that firms produce less output than would be socially optimal.

Positive externalities may arise in certain high technology industries because firms cannot appropriate all the benefits of their investment in knowledge. Some of these benefits accrue to other sectors of the economy. The social benefits of innovation therefore exceed the private benefits. Through

23. *See, e.g.*, DANIEL F. SPULBER, REGULATION AND MARKETS 46–48 (MIT Press 1989).